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EXAMINER

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ART UNIT

PAPER NUMBER

1754

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38

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

| | |
|-------------------------------------|-------------------------------------|
| Application No. 08/958865 | Applicant(s) KADWEN et al |
| Examiner STRAUB | Group Art Unit 1754 |

--The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address--

Period for Response

AND A TIME LIMIT

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE **3** MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. **1**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on **12/30/99**
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) **19-27** is/are pending in the application.
- ☐ Of the above claim(s) is/are withdrawn from consideration.
- ☐ Claim(s) is/are allowed.
- ☒ Claim(s) **15-27** is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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1 In view of the appeal brief filed on December 30, 1999, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (a) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (b) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2 It is noted that the copy of the claims set forth in the brief is not correct in that claim 19 as set forth therein is not a copy of claim 19 as amended in the amendment filed March 24, 1999 but rather is a copy of claim 19 that was submitted in the preliminary amendment filed January 22, 1998.

3 The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4 Claims 19-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

A The independent claims 19 and 26 require that an acidic aluminum oxide sol or an acidic aluminum oxide suspension be passed through the nozzle plate. The specification does not describe or enable the production of these feeds. Since aluminum oxide has basic properties, it would be expected by one skilled in the art that the aluminum oxide would react with the acid to form aluminum salts, which would consume the aluminum oxide. After consumption by the acid, aluminum oxide would not be present in the feed. While it is granted that sols containing aluminum values are known per se and suspensions from aluminum oxide are also known, the instant feeds which specifically require the presence of aluminum oxide in the presence of acid are not known. Instant example 1 has been considered. It is noted that aluminum oxide (pseudo-beohmite) was mixed with nitric acid to form an aluminum oxide **hydrosol**. This hydrosol is not aluminum oxide but rather contains aluminum oxide reaction products. The reporting of the content of the sol as aluminum oxide content does not state or show the actual composition of the sol any more than reporting that a beef steak contains a certain amount of carbon.

B Claims 19-21 and 24-27 require the collection of aluminum oxide beads form the process . This is not described or enabled. It would be expected that as a result of the reaction condition that the resultant beads would be a bead of aluminum hydroxide or a gel of aluminum hydroxide. While no issue is taken that these beads can be converted to aluminum oxide as the result of calcination as specified in claims 22-23, there is no description or enablement for producing

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aluminum oxide beads using the steps recited in claims 19-21 and 24-17. It is noted that for claims 22 and 23 to be proper dependent claims, the independent claim must be broader than the dependent claims, since otherwise the claims would be of the same scope

D Applicants in their brief pages 9-10 and in the amendment under 116, page 4, that they do not use ammonia as a reactive gas, but rather applicants ammonia is a gelling agent or a catalyst. This is not described or enabled. The passing of an acidic feed through a known basic gas would yield the well known, and expected by those of skill in the art, acid-base reaction in which the acid and base react to form salts. (Eg ammonium nitrate) , As the results of the basification (elimination of acid) the aluminum would form aluminum hydroxide bonds and gel.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6 The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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The art area applicable to the instant invention is that of catalyst support preparation and metal oxide bead formation.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicant and the examiner (ESSO Research & Engineering V Kahn & Co, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what the references alone teach (In re Bode, 193 USPQ 12, (16) CCPA 1977; and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. (In re Clinton 188 USPQ 365 (367) CCPA 1976 and In re Thompson 192 USPQ 275 (277) CCPA 1976.

7 Claims 19-27 are rejected under 35 U.S.C. 103 as being obvious to one of ordinary skill in the art in view of Bezzi et al -200 taken with Sanchez et al, the combination taken with Landis or DeHaven et al.

As is known by those of ordinary skill in the art and admitted conventional by applicants on pages 1-4 of the specification, it is conventional and known to form beads of metal oxide by supplying a precursor such as a hydrosol or an acidic slurry from filter cakes, etc, forming the slurry into droplets, which fall through the air to form spheroids and then enter a column of liquid in which they are gelled. It is admitted conventional to form beads of various compositions in this manner, with beads based on aluminum, uranium, etc, being specifically mentioned. The gelling media is admitted to be typically be based upon ammonia or an ammonium precursor such as

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ureas or hexamethalene tetraamine. The use of surfactants in the gelling medium is conventional and so admitted.

Bezzi et al -200 fairly shows the production of metal oxide beads from a hydrolyzable feed, which is processed by the instant process steps. Bezzi et al fairly shows the formation of droplets by vibration of a droplet formation head, the use of a reactive atmosphere of ammonia gas to pregel the feed, generation of a foam layer on top of an aqueous ammonia solution to retard the fall of the pregelled beads, completion of the gelation in the aqueous ammonia hydroxide bath, followed by the drying and calcination of the formed beads into particles of the corresponding oxide.

Note Abstract, figure 1, column 1, lines 15-30, column 2, lines 10-20, column 3, lines 19-22 and the claims.

While Bezzi et al -200 does not explicitly recite alumina bead manufacture, it would have been obvious to one of ordinary skill in the art of metal oxide bead formation and who is well aware that alumina oxide beads are routinely made by gelling droplets as admitted conventional, to employ the process of Bezzi et al to make alumina beads from an alumina precursor feed solution. This is considered particularly obvious since in column 1, lines 8-9 and 49-50, Bezzi et al teaches to employ his process to make spherical particles for catalysts, which supports are commonly made of alumina. In any event, Bezzi et al is generic to the production of metal oxide beads from materials which are hydrolyzable with ammonia and ammonia hydroxide such as materials which are used for catalysts, column 1, lines 6-9 and as admitted conventional on page

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1-4 of the specification. As shown by Sanchez et al, claim 1 the formation of aluminum oxide beads via drop forming methods is conventional and known to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art to form aluminum oxide beads using the drop forming process of Bezzi et al because Sanchez et al how that aluminum oxide beads are routinely formed in the art by drop forming methods and because the references show that the aluminum oxide beads that they form have the same utility in catalytic processes..

While Bezzi et al only specifically illustrates the use of one nozzle, he fairly suggests the use of a plurality of nozzles in his teaching of a spinnerette in column 3, lines 1-5. Further as shown by Sanchez et al, column 18, lines 0-65, the number of nozzles used is a matter of choice and is dependent upon the size of the apparatus, which is of course dependent at least in part in the amount of product to be produced . Sanchez et al specifically recites the use of 16-20 nozzles when a 4 inch diameter column is used to gel the product. Accordingly the number of nozzles is clearly an matter of engineering choice. It would have been obvious to one of ordinary skill in the art to select the number of nozzles because this would directly affect the amount of product produced. While neither Sanchez et al or Bezzi et al show the use of a ring of nozzles for the formation of the droplets, the use of a ring of nozzles to provide a plurality of streams of droplets to be solidified in a drop tower is conventional and shown by Landis (figure , item 4) and De Haven who shows a vibrating ring of nozzles in their figures. The use of the conventional ring of nozzles such as those shown by Landis and DeHaven to provide a plurality of streams in the bead forming process of Bezzi et al would have been obvious to one of ordinary skill in the art because

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of the expected increase in production capacity over a single nozzle. While it may be that Landis and DeHaven are not directed to the production of beads containing metal values, they are considered analogous art since the formation of droplets is the formation of droplets.

It is considered that the use of a ring of nozzles would be an obvious expedient when supplying a source of reactive gas as done by Bezzi -200 since each of the nozzles of the ring would be equidistant from the center of the ring, which center is the clear and obvious choice to supply gas equally to each of the ring positions. From simple geometry, the use of other nozzle arrangements such as a square, rectangle, ellipse, would not provide the equal distance from a single point.

While this combination of a ring of droplet forming nozzles into the process of Bezzi et al would not specifically teach the supply of ammonia from the inside of droplet forming nozzles, in view of the requirement in Bezzi et al that each of the droplets formed enter the aqueous gelling solution with the same degree of pregellation, it would have been obvious to one of ordinary skill in the art to provide a uniform ammonia atmosphere for the ring of droplets from the droplet forming nozzle by providing by providing a supply of ammonia from the center of the ring.

8 Claims 19-27 are rejected under 35 U.S.C. 103 as being obvious to one of ordinary skill in the art in view of Sanchez et al taken with Bezzi et al -645, the combination taken with Landis or DeHaven et al.

As is known by those of ordinary skill in the art and admitted conventional by applicants on pages 1-4 of the specification, it is conventional to form beads of metal oxides by supplying a

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precursor such as a hydrosol or an acidic slurry from filter cakes etc, forming the slurry into droplets, which fall through the air to form spheroids and then enter a column in which they are gelled. It is admitted conventional to form beads of various compositions in this manner, with beads based on aluminum, uranium etc being specifically mentioned. The gelling media is admitted to be typically be based upon ammonia or an ammonium precursor such as ureas or hexamethalene tetraamine, The use of surfactants in the gelling medium is conventional and so admitted.

The production of beads from aluminum containing precursors is fairly shown by Sanchez et al. Note columns 3-4 Column 5, lines 49-62, column 17-18, column 34, claims 1, 5, 6 and 14 in which Sanchez et al teaches the formation of acidic sols and suspensions containing alumina values, the formation of droplets from these using a plurality of nozzles (16-20 nozzles with a 4 inch column being specially exemplified) allowing the droplets to fall through the atmosphere to form spheroids, which are collected in a gelling medium containing ammonium hydroxide. While Sanchez does not specially set forth the use of vibrating nozzles to form his droplets, it would have been obvious to one of ordinary skill in the art to employ these conventional known devices since they are shown by Bezzi et al and DeHaven to be effective in the formation of droplets.

Further while Sanchez does not specifically require the use of a reactive gas atmosphere, he recognizes that the presence of ammonia in the atmosphere through with the alumina precursor droplets fall can contain ammonia, which ammonia will pregel the feed. Column 17 lines 25-40. It would have been obvious to one of ordinary skill in the art to provide an ammonia atmosphere

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in the fall stage of the process of Sanchez et al because Bezzi et al teaches that this atmosphere causes pregellation of the particles to partially harden them, which reduces deformation when the droplets contact the liquid. The concern of Sanchez et al that ammonia in the fall atmosphere may cause plugging of the nozzles is addressed by Bezzi et al who provide an inert blanket gas between the droplet formation area and the nozzles, column 1, lines, 62-68.

While the combination of Sanchez and Bezzi et al -645 does not specifically recite the use of a ring of nozzles (which is conventional per se as shown by Landaus and DeHaven) with the introduction of the ammonia in the center of the ring, one of ordinary skill in the art from routine consideration of geometry would be well aware that the center of a ring of nozzles is equidistant from all point on the ring, which is not true of other shapes such as squares. rectangles, ellipses, etc. in view of the requirement of a uniform atmosphere to achieve uniform gelation, the selection of the center of a ring of nozzles is a clear and obvious choice for the introduction of a reactive gas since all points of the ring are equidistant from the center.

9 The following allowable claim is suggested for the purpose of an interference:

Claim 1 of US Patent 5,500,162

The suggested claim must be copied exactly, although other claims may be proposed under 37 CFR 1.605(a).

Applicant should make the suggested claim within THREE MONTHS from the mailing date of this letter, ~~whichever is longer~~ ^{SEP}. Failure to do so will be considered a disclaimer of the

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subject matter of this claim under the provisions of 37 CFR 1.605(a). THE PROVISIONS OF 37 CFR 1.136(a) DO NOT APPLY TO THIS TIME PERIOD.

Claims 19-27 are considered unpatentable over this suggested claim. See the rejection below

66 For a complete action on the merits, the following rejection is made. This rejection is presumptive based on the possibility that applicants do not copy the claims as required above, which would be deemed a disclaimer of the invention claimed.

10 Claims 19-27 are rejected under 35 U.S.C. 102(g) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Theisen et al 5, 500, 162

Theisen et al claims a method for the production of spheres of metal oxides in which a liquid is dripped through a nozzle plate, the droplets falling through a first zone and then in a second zone where they are exposed to a reactive gas to produce gelling. The droplets are then passed through a foam layer and into a reaction liquor. The falling droplets form an envelope and the reaction gas is introduced inside the envelope and extracted outside the envelope or introduced outside the envelope and extracted outside the envelope. Claim 1 of Theisen et al and also claims 5, 7, 8, 9

While the claims of Theisen et al are broader in some aspects and narrower in other aspects than the instant claims, proper reference to the specification of Theisen et al to determine the scope of the claims of Theisen et al, finds that:

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A The envelope is made by the use of a ring of nozzles 24 in nozzle plate 14 and is clearly shown as an annular ring in figures 1-3.

B the production of micro-spheres based on aluminum oxide is clearly intended and embraced, column 6, lines 10-43.

C The reactive gas is introduced laterally through a narrow annular gap 62 in gas delivery 32.

D That the nozzle plate is vibrated, claim 16 and column 6, lines 14-16 at 20-100 Hz.

E suitable viscosities are 25-75 m Pa.s. column 6, lines 11-14.

F the use of an aqueous ammonium liquor is used as the coagulation/ gelling liquor.

While Theisen et al does not specifically recite the use of ammonia gas in the free fall zone, ammonia is a known reactive gas in the formation of droplets, and in view of the use of ammonium solutions, it would have been obvious expected and inherent that at least some of the gas in the free fall zone would be ammonia from the liquor. The use of ammonium as the reactive gas is accordingly at least implicitly suggested and would in any event would have been obvious to one of ordinary skill in the art because it is compatible with the ammonium hydroxide gelling solution.

11 Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Theisen et al-162 as applied to claim s 19-27 above, and further in view of Bezzi et al 4, 285,645 or Bezzi et al -4,346,200.

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The use of ammonia as a reactive gas in the formation of microspheres as part of the reactive atmosphere is taught in column 4 of each of the Bezzi et al patents. Its use as the reactive gas in the process of Theisen et al would have been obvious to one of ordinary skill in the art because the Bezzi et al patents show that its use in analogous process is known and in view of the requirement to use a reactive gas in Theisen et al

12 Applicants arguments in the brief have been considered.

The urging that Bezzi et al does not teach (apparently anticipate) the instant claims is noted, as is fact that the invention is rejected under 35 U.S.C. 103 as obvious to one of ordinary skill in the art. It is noted that as admitted known on pages 1-4 of the specification the formation of spheres of aluminum oxide by forming droplets of gellable material and free falling the droplets so that they can form spheroids prior to contacting a gelling liquid is old, to include the formation of aluminum oxide beads to include the use of acidic suspensions formed from aluminum oxide hydrates and boehmite. Applicant grants that Bezzi et al teaches the formation of metal oxide beads, as is claimed by Bezzi et al, but urges apparently that since Bezzi et al only exemplifies uranium oxide, Bezzi et al would not be applicable to the formation of beads based on other metals, to include the beads based on aluminum oxide, admitted to be known by applicant on pages 1-4 of the specification. Applicants assert that the rejection is based upon an obvious to try rationale relying on *In re O'Farrell* 7 USPQ2d, 1673, 1681. As stated in *O'Farrell*, (1680 right bottom), "Any invention that would have been obvious in fact under 103 would also have been, in a sense, obvious to try". However as consistent with page 1681 (4), it is however considered

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that in the instant situation that the formation of aluminum oxide based beads using pregellation would have been obvious to do, since the formation of aluminum oxide based beads by gelation is known and so admitted and it would have been expected by one of ordinary skill in the art that the process of Bezzi et al to aluminum oxide based beads would have been successful, since Bezzi et al shows that it is operative with a typical metal oxide based bead. To hold otherwise would limit claims to only the exemplified examples. The assertion on page 7 of the brief that one of ordinary skill in the art would be well aware that aluminum oxide beads is not supported by the Bezzi et al disclosure is noted. It is respectfully submitted that one of ordinary skill in the art is aware of the state of the art as shown by the references of record, to include those cited by the applicant and the examiner (ESSO Research & Engineering V Kahn & Co 183 USPQ 582 (1974)) and would also be aware of the admitted prior art. The assertion that the motivation must come from the references is noted, however as stated in *In re Fine*, the motivation can come from the knowledge generally available to one of ordinary skill in the art. The urging that Bezzi et al only shows a vibrating perforated disk with one hole and not the at least ten holes of the instant claims is noted. It is considered obvious and routine to use a plurality of holes because of the expected result of increased production. It is considered that the taught use of a complete spinnerette taught by Bezzi et al instead of the illustrated one hole plate is a clear suggestion to use nozzle plates with more than one hole. In any event, the use of nozzle plates with a plurality of holes is conventional and clearly set forth by Sanchez in an analogous process. The urging that Bezzi et al does not recite the instant blowing of ammonia gas from the interior of an annular ring of droplets is noted.

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However it is considered that the same would have been obvious to one of ordinary skill in the art as an obvious expedient to assure uniformity of ammonia concentration when using a plurality of nozzles, since as is known from simple geometry, the center of an annular ring (circle) is equidistant from all points on the ring.

Applicant assert that they do not use ammonia as a reactive gas but rather as a gelling agent. As is known by even routineers in the art, aluminum forms gels as a result of a pH change, which occurs when acidic aluminum feeds are neutralized with base. This neutralization is a reaction. The assertion that the ammonia is a catalyst is not supported by fact and it would be expected that ammonia in the gas phase would react with the acid in the liquid droplets in the same manner that ammonia in the liquid would.

Applicants urge that Takumi and Sanchez are not analogous art to Bezzi et al, apparently since the these references do not set forth the identical process or explicitly recite that they should be combined with each other. Mere recitation of the differences between the references does not obviate what the references taken together would collectively suggest to one of ordinary skill in the art. It is noted that by definition since patents are to be directed to novel and unobvious subject matter, it would not be expected that their teaching would be the same.. The urging the references do not suggest that their disclosures are combinable, does not address the issue of their collective suggestion to one of ordinary skill in the art.

Applicants urge that Landaus and DeHaven are directed to non-analogous art. While it is granted that these reference produce products other than metal oxide based beads, they are relied

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upon to shown the conventionality of ring nozzles to form beads. Bead formation is analogous art.

By virtue of having a long and detailed claim, the inventors have been able to indicate a number of differences between their invention and the references. However for patentability said differences must be unobvious and not mere expedients conventional in the art In re Nelson 176 USPQ 202. In the instant situation, the differences are expedients conventional in the art.

13 Applicants' prior arguments were reconsidered, but remain not persuasive.

The urging that on the lateral supply of ammonia is noted as is the figure of Bezzi et al which shows lateral flow. From the disclosure, at best the ammonia is supplied from the interior or exterior of the ring of droplets formed by the ring of nozzles in the vibrating nozzle plate. The urging that the instant beads are of uniform shape, have a narrow grain structure good porosity high abrasion strength and low abrasion loss is noted. The claims do not so required. Further, there is not comparative data of record that shows that the instant beads have properties that are different in fact from the beads of the prior art.

24 Applicants arguments filed March 24 1996 were not persuasive. The urging that the references do not explicitly recite the use of an annular nozzle plate having at least ten nozzles is noted While this limitation is not explicitly taught by Bezzi, the provision of a plurality of nozzles for the expected result of increasing production in scale up is routine design and shown by Sanchez. It is noted that there is no criticality shown for either an annular nozzles plates or more than 10 nozzles. The urging that each of the references contain disclosures which are not

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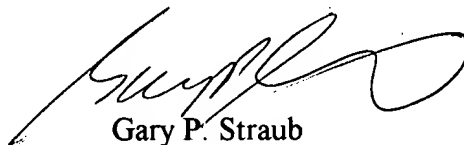
identical is noted. This is what would be expected when reviewing patents which are to be drawn to distinct inventions. The urging that one references does not teach what another does , does not point out how the instant claims would not have been obvious to one of ordinary skill in the art, who is aware of the teaching of all the references and would not combine the references willy nilly. The urging on obvious to try is noted, however, it is considered that the references fairly set forth that it would have been obvious to do, and that a trial would have a reasonable probability of success.

15 No Claims are allowed

16 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Gary P. Straub whose telephone number is (703) 308-1094.

Any inquiry of a general nature or regarding the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0662.

The fax number for Technical Center 1700 is 703-305-3599.



Gary P. Straub
Primary Examiner
Art Unit 1754

Straub/gps
March 27, 2000